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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/512,570	02/24/2000	Edward W. Conrad	(BU999-152)	5806

7590 04/21/2004

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EXAMINER

LU, TOM Y

ART UNIT	PAPER NUMBER
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2621

DATE MAILED: 04/21/2004

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/512,570

Applicant(s)

CONRAD ET AL.

Examiner

Tom Y Lu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-7,9-12 and 14-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7,9-12 and 14-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Response to Amendment

1. The amendment and written response filed on March 31, 2004 has been entered.
2. Claims 3, 8 and 13 have been cancelled.
3. Claims 1-2, 4-7, 9-12 and 14-21 are pending.

Response to Arguments

4. Applicant's arguments with respect to claims 1, 6 and 11 have been considered but are moot in view of the new ground(s) of rejection.

The Kannon reference:

Applicant argues the preambles of independent claims 1, 6 and 11 indicate that the claims are directed to a method or system for extracting two-dimensional image shapes of submicron structures formed by photolithography on semiconductor wafer. The Kannon reference is not directed to this subject matter.

In response to applicant's arguments, the recitation "extracting two-dimensional image shapes of submicron structures formed by photolithography on semiconductor wafers" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

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In addition, applicant argues the Kannon reference fails to teach the newly added limitation of “identifying a preliminary, approximate edge of the shape, and then using points along that approximate edge, identifying a more precise edge of the shape”. Such limitation is well known in the art. Accordingly, a new reference has been cited in the following office action.

Claim Objections

5. Claims 1 and 6 are objected to because of the following informalities: step e) is missing from both claims. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-2, 4-7, 9-12 and 14-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Kosaka (U.S. Patent No. 5,009,521).

- a. Referring to Claim 1, Kosaka discloses identifying a preliminary, approximate edge of the image shape (Kosaka at column 10, lines 8-10, teaches using an edge detector to compute edge detection information, such edge detection information is the claimed “preliminary, approximate edge of the image shape”); identifying a more precise edge of the image shape (edge tracing points shown in figure 4 are the claimed “more precise edge of the image shape) by a) identifying a point (point C) along said approximate edge; b) obtaining intensity vs. pixel information (each edge point contains intensity vs. pixel information) along a

plurality of scans extending in different directions, through substantially said point, in the vicinity of the edge of the image shape (see figure 17 for different direction through substantially same point); c) recognizing scans with sufficient contrast as containing edge information (background takes on value of "0" and portions occupied by cell images take on a value of "1" is the claimed sufficient contrast as containing edge information. For details on tracing, see column 11, lines 21-34); d) subjecting the recognized scans to an edge detection algorithm (edge tracing is an edge detection algorithm); e) detecting a point on the more precise edge location of the image by using said edge detection algorithm (for example, detecting point C, column 11, line 22); and repeating steps b), c), d) and e) for different points along the approximate edge to generate a locus of points that define the two-dimensional shape of the image from the detected edge values (see figure 4).

- b. Referring to Claim 2, Kosaka discloses wherein the edge detection algorithm is a user defined edge detection algorithm that is tailored to the application (the edge detection algorithm is a user defined edge detection algorithm in Kosaka).
- c. Referring to Claim 4, Kosaka discloses wherein the obtaining step includes the step of obtaining intensity vs. pixel information in at least four directions (see figure 17).
- d. Referring to Claim 5, Kosaka discloses wherein one of said direction is normal to the approximate edge location (see figure 17).
- e. With regard to Claim 6, all limitations are addressed in Claim 1.

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- f. With regard to Claim 7, all limitations are addressed in Claim 2.
- g. With regard to Claim 9, all limitations are addressed in Claim 4.
- h. With regard to Claim 10, all limitations are addressed in Claim 5.
- i. With regard to Claim 11, all limitations are addressed in Claim 1.
- j. With regard to Claim 12, all limitations are addressed in Claim 2.
- k. With regard to Claim 14, all limitations are addressed in Claim 4.
- l. With regard to Claim 15, all limitations are addressed in Claim 5.
- m. Referring to Claim 16, Kosaka discloses wherein the plurality of directions are angularly spaced apart about $22\frac{1}{2}$ degrees (see figure 17).
- n. Referring to Claim 17, Kosaka discloses wherein the plurality of directions are angularly spaced apart about 45degrees (see figure 17).
- o. With regard to Claim 18, all limitations are addressed in Claim 16.
- p. With regard to Claim 19, all limitations are addressed in Claim 17.
- q. With regard to Claim 20, all limitations are addressed in Claim 16.
- r. With regard to Claim 21, all limitations are addressed in Claim 17.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Maruyama et al, U.S. Patent No. 5,72,763, see figure 16.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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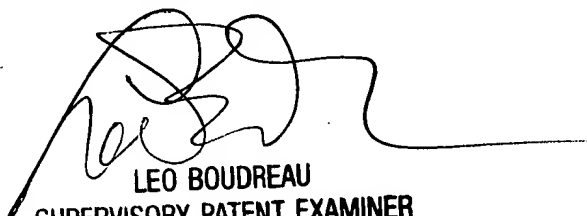
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom Y Lu whose telephone number is (703) 306-4057. The examiner can normally be reached on 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H Boudreau can be reached on (703) 305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Y. Lu



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